

English Translation of Claims as Amended Under Article 19

1. An intelligent traffic system based on a cellular mobile communication system networks and in-vehicle terminal technology, which at least comprises a road system and an in-vehicle system, wherein the road system at least comprises a traffic control center and a cellular mobile communication system, and the in-vehicle system comprises at least one in-vehicle terminal, characterized in that:

the road system communicates with the in-vehicle system via the cellular mobile communication system;

the road system performs information acquisition, information services and toll collection without vehicle stopping for vehicles by the way of information points and information areas in the form of instructions pre-stored or just downloaded into the in-vehicle terminal;

the way of information points and information areas for information acquisition and information services means that when a vehicle is passing a position or area specified by the traffic control center, the in-vehicle terminal will trigger an instruction of information point or information surface corresponding to the position or area stored in the in-vehicle terminal in the form of instruction, thereby an action required by the instruction is generated and it is at least one of the following: communication between the in-vehicle terminal and the traffic control center or the speech information sent to the driver;

the toll collection without vehicle stopping means that when the vehicle is passing the vicinity of a road toll station, the in-vehicle terminal will trigger a toll confirmation instruction corresponding to the toll station stored in the in-vehicle terminal in the form of instruction, thereby an action required by the instruction is generated and it is at least one of the following: communication between the in-vehicle terminal and the traffic control center or the speech information sent to the driver.

2. The intelligent traffic system according to claim 1, wherein the road system further comprises a road toll collection system in addition to the traffic control center and the cellular mobile communication system, characterized in that:

the road toll collection system comprises a toll station and a toll collection center;

the toll collection center receives the evidence of vehicle consumption from the toll station and the information on toll confirmation sent from the in-vehicle terminal respectively, and approves the toll collection.

3. The intelligent traffic system according to claim 2, characterized in that:

the toll collection operation of the toll center is concretely implemented by the user charging mechanism of the cellular mobile communication system based on the sum specified by the road toll collection system and according to the cellular mobile communication system user number bound with the mobile communication module of the in-vehicle terminal.

4. An in-vehicle terminal for an intelligent transport system, which at least comprises: a central processing unit, an information input unit, an information output unit, a memory, an in-vehicle terminal instruction processing system stored in the memory, and the instructions and their combinations downloaded into the in-vehicle terminal from the traffic control center or made by the user himself, characterized in that:

the instruction is a kind of computer operation instruction with a fixed format and a variable length that can be processed by the central processing unit;

the instruction format fields at least include conditions for triggering execution, a number of the operation type and a formatted command of the execution content;

the conditions for triggering execution of the instruction can be the type of parameters or variable and fixed information that can be processed by all the in-vehicle terminals;

the information input unit, the information output unit, and the memory are connected to the central processing unit, and by means of a instruction processing system the central processing unit retrieves each instruction in the instruction set and compares the conditions for triggering execution in the instruction with the parameter values provided by the related information input unit, and outputs the content specified by the instruction via a specified information output unit according to the number of operation type specified by the instruction when the conditions for triggering execution are met.

5. The in-vehicle terminal according to claim 4, characterized in that, the information input unit is an analog/digital information unit which can be equipped in the vehicle and connected to the central processing unit of the in-vehicle terminal, and the information that can be provided by the information input unit at least includes the position, real-time speed, traveling direction, traveling time of the vehicle.

6. The in-vehicle terminal according to claim 4, characterized in that, the information input unit is an analog/digital information unit which can be equipped in the vehicle and connected to the central processing unit of the in-vehicle terminal, and the information that can be provided by the information input unit at least includes the base station number of the cellular mobile communication system, and the user number of the cellular mobile communication system.

7. The in-vehicle terminal according to claim 4, characterized in that, the information input unit is an analog/digital information unit which can be equipped in the vehicle and connected to the central processing unit of the in-vehicle terminal, and the information that can be provided by the information input unit at least includes the switching value input from the devices equipped in the vehicle, the category and the model number of the present vehicle, the physical license plate and electronic license plate of the present vehicle, the body color of the present vehicle and so on pre-stored in the internal memory of the in-vehicle terminal.

8. The in-vehicle terminal according to claim 4, characterized in that, the information input unit is an analog/digital information unit which can be equipped in the vehicle and connected to the central processing unit of the in-vehicle terminal, and the information that can be provided by the information input unit at least includes the parameters of a vehicle body vibration sensor.

9. The in-vehicle terminal according to claim 4, characterized in that, the information output unit is any of the information units which are equipped in the vehicle and connected to the central processing unit of the in-vehicle terminal, and the information that can be represented by the information output unit at least includes the information returned to the center with a format and content specified by a related instruction, the information output to the driver with a format and content specified by a related instruction, and the information sent to the devices equipped in the vehicle specified by a related instruction.

10. A apparatus for prompting a driver that the turning intention when

driving the vehicle past a crossing is inconsistent with the route specified in advance, which at least comprises a central processing unit, switches for direction indicator lamps of the vehicle and an information output unit, its realization logic being that when the vehicle is in an area or close to a crossing of a specified position, if the turning requirement of a predetermined navigation route is different from the current switching state of the direction indicator lamps of the vehicle, an information prompting that the phenomenon is not according to the navigation requirement will be output by the information output unit to the driver.

11. An instruction format used in an intelligent traffic system and an in-vehicle terminal, its format fields at least include conditions for triggering execution of an instruction, the operation type of the instruction and the operation content of the instruction, characterized in that,

the word length of each instruction can be different from the others;

the trigger conditions of an instruction at least specify a value or a logical value of a parameter as the criterion for judging whether the instruction should be implemented, and if the parameter is a variable value information with errors or of discrete nature, or the trigger conditions are of a regional nature, the effective value range of the parameter must also be attached;

the operation type of the instruction determines the output mode and the associated devices of the instruction execution.

12. A method for road information acquisition, characterized in that,

firstly determining a scope covering a target area as a pre-selected area, and the information to be collected as the specified information;

sending a request to the vehicles in the pre-selected area for returning the specified information of the vehicles attached with their position information;

selecting the vehicles in the target area based on the position information in the returned information;

the specified information of the vehicles in the target area is the target information collected according to the present method.

13. A method for prompting the information on road traffic signs to a

driver by means of the instruction system of an in-vehicle terminal, characterized in that,

regarding the prompting object of a road traffic sign as the trigger condition of an instruction;

regarding the information content of the road traffic sign as the specified content of the instruction;

specifying the output mode of the instruction as an output mode that can be received by the driver.

14. The method according to claim 13, characterized in that, the trigger condition at least is one of the following: position or area, speed, traveling direction and vehicle model.

15. The method according to claim 13, characterized in that, the output mode at least is one of the following: speech, text or image, signal or light.